REMARKS

Claim 51 has been amended to add the limitation of claim 56, which has been cancelled, and to add a thereby clause, as suggested by the Examiner. Claim 57 has been amended to correct dependency after the cancellation of claim 56. An obvious inadvertent typographical error in the title is corrected herein. None of the amendments made herein constitutes the addition of new matter.

The Rejections under 35 U.S.C. 112, second paragraph

Claims 51-58 have been rejected under 35 U.S.C. 112, second paragraph, as allegedly being incomplete for omitting essential steps. Applicants respectfully traverse this rejection.

The Examiner has proposed a "thereby" clause to resolve this rejection. In the interest of advancing prosecution and without acquiescing to the rejection, Applicants have amended claim 51 in accordance with the Examiner's helpful suggestion.

In view of the foregoing, Applicants respectfully state that the claims should be deemed to meet the requirements of Section 112, and this rejection should be withdrawn.

The Rejections under 35 U.S.C. 102

Claims 51-55 remain rejected under 35 U.S.C. 102(b), as allegedly anticipated by Sartori (2000). Applicants respectfully traverse this rejection.

The Patent Office has characterized Sartori as teaching a clinical trial in which 200 breast or colon cancer patients were pretreated with omeprazole daily for seven days before chemotherapy was started. Chemotherapy consisted of cyclophos-phamide, methotrexate and fluorouracil for breast cancer patients and of fluorouracil for the colon cancer (i.e., adenocarcinoma) patients. The Patent Office has also stated that the statement of the intended use does not limit the present claimed invention.

Applicants respectfully note that it is intended that the present claims are limited by recitation of the use of a proton pump inhibitor, together with an antacid, to treat a cancerous condition, and it is emphasized that this particular use is novel over the cited prior art. As noted by the Examiner, Sartori discloses the use of proton pump inhibitors to reduce the frequency of injury to the gastrointestinal tract, including the upper gastrointestinal mucosa, caused by chemotherapy. The Sartori study merely evaluated the occurrence of chemotherapy-induced ulcers, heartburn or pain in patients receiving proton pump inhibitors compared to those receiving a placebo. The paper does not disclose or suggest that the proton pump inhibitors have an effect on the cancer itself, as has surprisingly been found by the present inventors.

In the interest of advancing prosecution and without acquiescing to the rejection, Applicants have amended claim 51 to require administration of a proton pump inhibitor and an antacid. The cited Sartori reference does not teach administration of both types of agents. Thus, the rejection has been rendered moot because the present invention is novel over the prior art, and the rejection must be withdrawn.

The Rejections under 35 U.S.C. 103

Claims 56-58 remain rejected under 35 U.S.C. 103, as allegedly obvious over by Sartori (2000) as applied to claims 51-55 above and Phillips (US 2003/0191159; US 6,699,885). Applicants respectfully traverse this rejection.

All of claims 51-58 now relate to the administration of an antacid (such as calcium carbonate) along with the proton pump inhibitor. The Phillips patent concerns methods comprising administering a proton pump inhibitor in combination with a buffering agent such as calcium carbonate, with the aim of treating an acid-related disorder (i.e., a acid-related stomach disorder) or improving absorption of the proton pump inhibitor. Neither Sartori nor Phillips discloses or suggests that proton pump inhibitors, either alone or in combination with an antacid, would be useful to treat cancerous conditions. Furthermore, the skilled person would not have been motivated

to combine the teachings of the two cited documents which are from different areas, Sartori relating to the prevention of chemotherapy-side effects such as gastroduodenal injury and epigastric pain and heartburn, while Phillips relates to the treatment of acid-related disorders such as ulcers and reflux, not related to chemotherapy side effects. However, even if the skilled person were to combine these documents, they would not arrive at a method of treating cancer comprising administering proton pump inhibitors and antacid, because neither document suggests that proton pump inhibitors (with antacid administration) themselves are effective against cancers, as has been found by the present inventors. Applicants note that the Sartori reference does not appear to provide any comparison of the effects of the proton pump inhibitor therapy on the cancers in the test patients, only on gastrointestinal symptoms apparently unrelated to their cancers; therefore no conclusion or inference can be drawn as to any effect on the cancer per se from this reference.

Claim 51, and all claims dependent thereon, are therefore non-obvious in view of the prior art. The same argument applies in response to the Examiner's objection that claims 56 to 58 are obvious in view of the combination of commercially available proton pump inhibitors (e.g., omeprazole) and antacids (e.g., TUMS), which again are known in combination for the treatment of such problems as acid indigestion, but not cancer. The combination improves the availability of the protein pump inhibitor in circulation, i.e., the proton pump inhibitors, which are weak bases, tend to accumulate in the stomach rather than being absorbed into circulation. Reducing the acid in the stomach improves availability of the proton pump inhibitors in circulation, and thus, availability to tumors, where the acidic microenvironment activates the proton pump inhibitors, thus, leading to the beneficial effects with respect to cancer. The beneficial effects with respect to cancer are not appreciated by the cited prior art, and in the absence of such an appreciation, there can be no prima facie finding of obviousness (see, e.g., In re Spormann and Heinke, 150 USPQ 449, which indicates that obviousness cannot be based on what was unknown in the prior art).

In view of the foregoing, Applicants respectfully submit that the present invention as claimed is not *prima facie* obvious over the cited art, and thus, the rejection must be withdrawn.

Conclusion

In view of the foregoing, it is submitted that this case is in condition for allowance, and passage to issuance is respectfully requested.

If there are any outstanding issues related to patentability, the courtesy of a telephone interview is requested, and the Examiner is invited to call to arrange a mutually convenient time.

This Amendment is accompanied by a Petition for Extension of Time, Request for Continued Examination and payment of $1270 as required by 37 C.F.R 1.17(a) and $930 as required by 37 C.F.R 1.17(e). It is believed that the present amendment does not require the payment of any fees pursuant to 37 C.F.R. 1.16-1.17. If this is incorrect, however, please charge any fees due under the foregoing Rules to Deposit Account No. 07-1969 and grant any extension of time, if needed.

Respectfully submitted,

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